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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,153	01/26/2006	Peter Spirov	90031.04US01	6506

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EXAMINER	
HOLZEN, STEPHEN A	

ART UNIT	PAPER NUMBER
3644	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/526,153	SPIROV ET AL.	
	Examiner	Art Unit	
	Stephen A. Holzen	3644	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *19 July 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-22* is/are pending in the application.

4a) Of the above claim(s) *14-22* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 3/28 is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *3/29/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Claims 14-22 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 7/19/2006.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milde Jr. (6,179,247) in view of Kulmaczewski (5,383,363).

Milde discloses a homeostatic flying saucer (see Figure 9, #18A-E) comprising: a body housing at least four generally downwardly directed thrusters (clearly illustrated in Figure 9); an electrical power source (electric starter motor 36) operably connected to said thrusters (electrically connected for starting motors 18A-E) and carried within said body (see Figure 10); and a homeostatic control system (see Figure 12 which illustrates the electronic circuit 70 used to control the servos that operate the throttles of the engines) operably connected to said thrusters to automatically control a thrust produced by each thruster in order to maintain a desired orientation of said saucer (see Col. 8, lines 1-27 that teach the thruster are automatically control to maintain stability),

said homeostatic control system including control circuitry that dynamically determines an inertial gravitational reference (see GPS, gyroscope, altimeter) for use in automatic control of said thrust produced by each thruster.

Milde does not disclose the use of an XYZ sensor arrangement and that XYZ sensor arrangement can be used for automatic control of the thrusters.

Kulmaczewski teaches that gyroscopes have operational limitations and that it is well known in the art to supplement gyroscopes with linear accelerometers which have been developed to measure angular acceleration and angular velocity in addition to linear acceleration and linear velocity. (See col. 1, lines 12-17).

Kulmaczewski goes on to teach that the inertial measurement unit preferably includes at least nine linear accelerometers, three disposed with their respective sensitive axes in substantially mutually orthogonal relationship defining first, second and third axes intersecting at a single origin point, and a pair of linear accelerometers disposed along each axis spaced at fixed distances from the origin point. The first, second and third pairs of linear accelerometers intersect the first, second and third axes, respectively, along which they are displaced with their sensitive axes in substantially orthogonal relationship with each other and the axis. (See Col. 1, lines 55+).

It would have been obvious to one having ordinary skill in the art, at the time the invention was made to supplement the gyroscopes of Milde with the IMU of Kulmaczewski for the purpose of increasing the safety and the stability of Milde's aircraft.

Re – Claim 13: Milde discloses the control circuitry is implemented as hardware and software logic.

4. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Milde in view of Kulmaczewski as applied to claim 1 above and further in view of ordinary skill within the art.

Re – Claim 2: As outlined above, Milde in view of Kulmaczewski disclose a total of at least 9 accelerometers (three in each plane).

Neither Milde nor Kulmaczewski discloses 6 sensors for the X and the Y planes.

It has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. St. Regis Paper Co. v. Bemis Co. 193 USPQ 8.

The examiner asserts that it would have been obvious to one having ordinary skill in the art, at the time the invention was made to add another 6 sensors (three to each the X and Y planes) for the purpose of redundancy. This would increase the safety of the aircraft and the passengers therein.

Applicant should appreciate the breadth of the claim language that is presently recited. Phrases such as "that sense acceleration and gravity in said X plane" are functional in nature. Applicant's functional language in the claims does not serve to impart patentability. While features of an apparatus may be recited either structurally or functional, claims directed to an apparatus must be distinguished from the prior art in

terms of structure rather than function. Apparatus claims cover what a device is, not what a device does. A claim containing a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus if the prior apparatus teaches all the structural limitation of the claims. In re Schreiber, 128 F.3d 1473, 1477-78,44USPQ2d, 1429, 1431-.2 (Fed. Cir. 1997); Hewlett-Packard Co. v. Bausch & Lomb Inc., 909 F.2d 1464, 1469 ,15 USPQ2d 1525, 1528 (Fed. Cir. 1990); Ex parte Masham, 2USPQ 2d 1647 (Bd. Pat. App. & Inter. 1987).

In conclusion, the examiner has asserted that it would have been obvious to use six sensors that sense acceleration and gravity in the x and y planes. Furthermore, it should be appreciated that accelerometers are capable of sensing acceleration and gravity in the X and Y planes as well as capable of sensing acceleration only in the X and Y planes.

Applicant is reminded that Kulmaczewski discloses a Z plane accelerometer that is capable of sensing yaw in the Z plane. (Yaw typically occurs around the Z-axis and therefore the Z plane accelerometers would be capable of sensing this motion.)

If applicant desires to have more weight than simply the "capability" of sensing the movements in the XYZ planes, then applicant must claim this language structurally.

Absent persuasive evidence that the number of accelerometers are significant (or contribute significantly to the art) the examiner will hold that a person having ordinary skill in the art would have found the number of accelerometers an obvious design choice.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Milde in view of Kulmaczewski and further in view of ordinary skill within the art as applied to claim 2 above and further in view of McCall (6,311,555).

Applicant has now limited the accelerometers such that some are a passive type and some are an active type.

None of the above-cited references teaches passive or active accelerometers. McCall et al teaches that it is well known in the art that passive and active accelerometers are known substitutes for each other. (See Col. 7, lines 45-55). It would have been obvious to one having ordinary skill in the art, at the time the invention was made to select either passive or active accelerometers as a matter of simple design choice.

Absent persuasive evidence that the particular accelerometers types are significant the examiner will hold that a person having ordinary skill in the art would have found the choice between passive and active accelerometers obvious.

6. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Milde as applied to claim 3 and further in view of ordinary skill within the art. None of the applied references teach the orientation of the accelerometers with respect to each other.)

It should be appreciated that, it has been held that rearranging parts of an invention involves only routine skill in the art. In re Japikse 86 USPQ 70. It would have been obvious to o en having ordinary skill in the art to arrange the accelerometers in the claimed orientation for the purpose of increasing the safety of the flight.

Absent persuasive evidence that the claimed location of the accelerometers is significant (or contribute significantly to the art) the examiner will hold that a person having ordinary skill in the art would have found the orientation of the accelerometers in the claimed orientation to be an obvious design choice.

7. Re – Claims 6-12: These claims consist entirely of functional language. The adjective before the word "circuitry" is merely the intended use of the circuitry and does not differentiate the claimed apparatus from the prior art. The phrases following the word "circuitry" are functional in nature and applicant is only limited to the capability of performing these functions. While the examiner cannot provide a reference that teaches each of these functions, the examiner asserts that Milde's circuitry is capable of fulfilling all of the functions outlined in the claims. Furthermore MPEP 2115 states: "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim."

"Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." The signals generated by the aircraft and the sensors are not structure, they are the material upon which the sensors and aircraft work. All the limitations in these claims are directed to manipulating electronic signals from control circuitry, and these signals themselves cannot impart patentability to the claims. The examiner suggests writing these claims as outlined by In re Beauregard, U.S. Court of Appeals Federal Circuit, 35 USPQ2d 1383, Decided May 12, 1995 No. 95-1054.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen A. Holzen whose telephone number is 571-272-6903. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teri Luu can be reached on 571-272-7045. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Sah
Stephen A Halvorson 9/30